

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

#### (PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference<br>E-2035/04   | <b>FOR FURTHER ACTION</b>                                |  |
| See Form PCT/IPEA/416  |  |  |
| International application No.<br>PCT/IT2004/000081   | International filing date (day/month/year)<br>23.02.2004 | Priority date (day/month/year)<br>23.02.2004 |
| International Patent Classification (IPC) or national classification and IPC<br>INV. F16G1/28  |  |  |
| Applicant<br>DAYCO EUROPE S.R.L. et al.  |  |  |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of sheets, as follows:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the report</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul> |  |  |

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|--|---|
| Date of submission of the demand<br><br>23.12.2005   | Date of completion of this report<br><br>19.05.2006                     |
| Name and mailing address of the international preliminary examining authority:<br><br><br>European Patent Office - P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk - Pays Bas<br>Tel. +31 70 340 - 2040 Tx: 31 651 epo nl<br>Fax: +31 70 340 - 3016 | Authorized officer<br><br>Das Neves, N<br>Telephone No. +31 70 340-4879 |



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/IT2004/000081

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on
  - the international application in the language in which it was filed
  - a translation of the international application into , which is the language of a translation furnished for the purposes of:
    - international search (under Rules 12.3(a) and 23.1(b))
    - publication of the international application (under Rule 12.4(a))
    - international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements\*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

**Description, Pages**

1-12 as originally filed

**Claims, Numbers**

1-31 as originally filed

**Drawings, Sheets**

1/3-3/3 as originally filed

a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3.  The amendments have resulted in the cancellation of:
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):
4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
  - the description, pages
  - the claims, Nos.
  - the drawings, sheets/figs
  - the sequence listing (*specify*):
  - any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)                  Yes: Claims      1-31

No: Claims

Inventive step (IS)                  Yes: Claims

No: Claims      1-31

Industrial applicability (IA)                  Yes: Claims      1-31

No: Claims

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

10/590224

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Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: EP-A-1 157 813 (DAYCO EUROP SRL) 28 November 2001 (2001-11-28)
- D2: BAYER: "Therban - Comparative properties" INTERNET ARTICLE, [Online] 23 November 2000 (2000-11-23), pages 5.1-5.33, XP002301499 Retrieved from the Internet: URL:[http://www.therban.com/intertherban/c1multimedia\\_en.nsf/SysAllByCMSInternalKey/CHAR-5E3CG9/\\$File/compa\\_prop.pdf?OpenElement](http://www.therban.com/intertherban/c1multimedia_en.nsf/SysAllByCMSInternalKey/CHAR-5E3CG9/$File/compa_prop.pdf?OpenElement) [retrieved on 2004-10-19]
- D3: WO 02/084144 A (GATES CORP) 24 October 2002 (2002-10-24)
- D4: US-B-6 419 7751 (MACKINTOSH JAMES GORDON ET AL) 16 July 2002 (2002-07-16)
- D5: EP-A-1 035 353 (GOODYEAR TIRE & RUBBER) 13 September 2000 (2000-09-13)
- D6: US-B-6 358 1711 (WHITFIELD KEVIN JOHN FRANCIS) 19 March 2002 (2002-03-19)

- 1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.
  - 1.1 The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):

A toothed belt (1) suitable for use in contact with oil and comprising a body (2) and a number of teeth (4) extending from at least one first surface of said body (2); said teeth (4) being coated by a first fabric (5), said fabric (5) being externally coated with a resistant layer (8), in which:

said resistant layer (8) comprises a fluorinated plastomer, a first elastomeric material and a vulcanizing agent;

said fluorinated plastomer is present in said resistant layer (8) in a larger quantity than

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said first elastomeric material;

said body (2) comprises a compound based on a second elastomeric material formed of a copolymer obtained from a dienic monomer and a monomer containing nitrile groups.

- 1.2 The subject-matter of claim 1 therefore differs from this known toothed belt in that said nitrile groups are in percentage between 33% and 49% in weight with respect to the weight of said copolymer.
- 1.3 The problem to be solved by the present invention may therefore be regarded as to obtain a toothed belt that can be used in contact with oil or even partially immersed in oil and at the same time maintaining the necessary mechanical properties.
- 1.4 The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons:
  - 1.4.1 The subject-matter of claim 1 consists in the selection of a particular range for the amount of nitrile groups in the copolymer from the range of the amount of nitrile groups in such copolymers that are commercially available and are described in document D2 (see the passages cited in the search report). Such a selection can only be regarded as inventive, if the particular range presents unexpected effects or properties in relation to the rest of the range. However, no such effects or properties are indicated in the application (the good behaviour of the polymer when in contact with oil is not surprising as it is evidenced in D2). Hence, no inventive step is present in the subject-matter of claim 1.
  - 2 The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding claim 16 drafted as independent claim directed to a timing control system, but containing all the features of the toothed belt of claim 1, which therefore is also considered not inventive.
  - 3 Dependent claims 2-15, 17-31 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, because either these features are already disclosed in similar

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toothed belts and would therefore be contemplated by the skilled person without the use of any inventive activity (see documents D1-D6 and the corresponding passages cited in the search report) or because they relate to normal design procedures.

**Re Item VII**

**Certain defects in the international application**

- 4 Claim 16 comprises all the features of claim 1 and is therefore not appropriately formulated as a claim dependent on the latter (Rule 6.4 PCT).
- 5 Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(I) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

In the present case, the following features are known in combination from the document D1 and belong in the preamble of such a claim:

- see paragraph 1.1.
- 6 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document D2 is not mentioned in the description, nor is this document identified therein.